
PO2725

ANTHOCYANIN-RICH GRAPE-BILBERRY JUICE INFLUENCES FAT METABOLISM AND IMPROVES RISK FACTORS FOR CARDIOVASCULAR DISEASES IN FISCHER RATS

D. Graf¹, S. Seifert¹, A. Jaudszus¹, A. Bub¹, B. Watzl¹

¹Department of Physiology and Biochemistry of Nutrition, Max Rubner-Institut, Karlsruhe, Germany

Background and objectives: Cardiovascular diseases (CVD) are a public health problem in Western countries. Diets rich in fruit and vegetables are inversely associated with the risk of CVD. Anthocyanins, a subgroup of flavonoids, are among the bioactive compounds in plant foods, for which a preventive potential for CVD is discussed. Therefore we investigated the impact of an anthocyanin-rich juice on CVD risk factors, while feeding a Western style diet.

Methods: Fischer rats were fed a diet mimicking Western fat intake (34 %kcal fat, rich in saturated fatty acids (SFA)) for ten weeks. Anthocyanin-rich grape-bilberry juice (ARJ) or anthocyanin-depleted grape-bilberry juice (control) were provided ad libitum (n=24/group). After the intervention period parameters of fat metabolism, adipokines, as well as fatty acid composition of plasma were determined.

Results: Intervention with ARJ decreased serum concentrations of cholesterol, leptin, and resistin ($p < 0.05$). Triglycerides tended to be decreased, too ($p = 0.079$), whereas no effects were observed for non-esterified fatty acids, glucose, insulin, and adiponectin. Furthermore, ARJ decreased the amount of SFA in plasma and increased the amount of polyunsaturated fatty acids (PUFA; $p < 0.05$). The ratio of n6:n3 PUFA was not affected.

Conclusions: The results of this study indicate that diets rich in anthocyanins might possess preventive potential for

CVD, even with concurrently high intake of SFA. Especially the increase in plasma PUFA should be investigated further, as health promoting effects for PUFA have been described. So far nothing is known about the mechanisms by which anthocyanins influence fatty acid composition of plasma. This study has been financially supported by the German Federal Ministry of Research and Education (0315379G).

Key words: Anthocyanins, fatty acids, adipokines, lipid metabolism